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EXAMINER
FOWLKES, ANDRE R

ART UNIT	PAPER NUMBER
2192	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/971,720	HOULDING, DAVID IAN
	Examiner	**Art Unit**	
	Andre R. Fowlkes	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _22 April 2005_.
2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-9,11-15,17,18,21,22,24-26,32-34 and 41_ is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _1-9,11-15,17,18,21, 22, 24-26,32-34 and 41_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All b) ☐ Some * c) ☐ None of:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. _____.
    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/22/05 has been entered.

2.   Claims 1-9,11-15,17,18,21, 22, 24-26,32-34 and 41 are pending. Claims 1, 32 and 41 have been amended. Claims 10, 16, 19, 20, 23, 27-31, 35-40 and 42-44 have been canceled.

Claim Objections

3.   The amendment is objected to under 35 U.S.C. 132 and 37 CFR 1.121 as it appears to be introducing new matter not supported by the original disclosure. The original disclosure does not reasonably convey to a designer of ordinary skill in the art that applicant was in possession of the amended subject matter at the time the application was filed. See *In re Rasmussen*, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981).

Specifically, there is no support given, from the original disclosure, for the amendments of claims 1, 32 and 41.

To overcome this objection, applicant may attempt to demonstrate that the original disclosure establishes that he or she was in possession of the amended subject matter or provide the page and line numbers, from the specification, in support of each change in the amended claims.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-9, 11-15, 17, 18, 21, 22, 24-26, 32-34 and 41 are rejected under 35

U.S.C. 103(a) as being unpatentable over Beatty et al. (Beatty), U.S. Patent No.

5,913,052 in view of Weinberg et al. (Weinberg) U.S. Patent No. 6,144,962.

As per claim 1, Beatty discloses a system and method for debugging software

with an architectural view, and in that, Beatty covers the steps of:

- **accessing a datafile descriptive of the underlying architecture** (col. 6 lines

20-23, "the memory stores (a datafile containing) a plurality of user-selectable

architectures corresponding to a plurality of (underlying architectures)"),

- **transforming the datafile to determine architectural components used to

form the underlying architecture and rendering, via a visualizer, a plurality of

graphical elements representative of the architectural components** (col. 6 lines 23-

26, "(The datafile is transformed and then) the display coupled to the memory (i.e. the

visualizer), displays (the architectural components of the underlying architecture)"),

- **the graphical elements forming a graphical representation of the

underlying architecture** (col. 6 lines 24-25, "a window on the display (includes a

graphical representation of the underlying) architecture including a graphical device

layout"),

- the graphical representation dependant on a particular mode of a plurality

of modes of operation (Beatty describes how the graphical representation is

dependent on a particular mode of a plurality of modes of operation at, col. 3:28-3:43,

"In an alternative embodiment of the present invention, the system further comprises

source software display circuitry that displays a source code representation of the DSP

software in a further window on the display ... In an alternative embodiment of the

present invention, the system further comprises object software display circuitry that

displays an object code representation of the DSP software in a further window on the

display"),

- wherein the visualizer is utilized for visualizing the underlying

architecture of the software system during conceptual development and

deployment phases of the software system (col. 3:21-23, "Additionally, the present

invention allows one or more of the user-selectable architectures correspond to DSPs

that do not even exist (i.e. during conceptual development)", and col. 3:6-16, "the

system of the present invention may include an interface between a processor of the

general purpose computer and a real (non-emulated) DSP. In this alternative

embodiment, the general purpose computer causes the DSP software to execute within

the real DSP (i.e. deployment phase)"),

- wherein the step of visualizing during the conceptual phase of the system

is performed by the visualizer operating in a direct simulation mode before the

underlying architecture has been implemented in the development and

deployment phases (col. 3:6-16, "the system of the present invention may include an

interface between a processor of the general purpose computer and a real (non-

emulated) DSP. In this alternative embodiment, the general purpose computer causes

the DSP software to execute within the real DSP (i.e. direct interaction simulation

mode), in turn causing the real DSP to change states over time. The general purpose

computer monitors the states allowing the architectural display circuitry to update at

least one field to reflect changes in the states", and col. 3:21-23, "Additionally, the

present invention allows one or more of the user-selectable architectures correspond to

DSPs that do not even exist (i.e. during the conceptual phase)"),

    - wherein the step of visualizing during the development phases of the

system is performed by the visualizer operating in a prototype simulation mode

(col. 3:21-23, "Additionally, the present invention allows one or more of the user-

selectable architectures correspond to DSPs that do not even exist (i.e. prototype

simulation mode)"),

    - wherein the step of visualizing during the deployment phase of the

system is performed by the visualizer operating in an architecture monitor

mode(col. 3:60-65, "In an alternative embodiment of the present invention, the

architectural display circuitry (i.e. visualizer) allows the user to specify a level of detail

regarding the graphical device layout to be displayed in the window (during the

architecture monitor mode). The level of detail may be had by zooming in or out or may

be had by displaying more or less DSP architecture detail, depending upon the user's

wishes").

Beatty doesn't explicitly disclose **displaying, on a web page, the graphical**

representation of the underlying architecture.

However, Weinberg, in an analogous environment, discloses **displaying, on a**

web page, the graphical representation of the underlying architecture (Fig. 11, and

associated text (e.g. col. 23 line 39 – col. 24 line 25), show that the graphical display is

a web page).

Therefore, it would have been obvious to a person of ordinary skill in the art, at

the time the invention was made, to incorporate the teachings of Weinberg into the

system of Beatty to **display, on a web page, the graphical representation of the**

underlying architecture. The modification would have been obvious because one of

ordinary skill in the art would have wanted a convenient, universal way to display the

graphical information to the user (Beatty, col. 2 lines 27-30).

As per claim 2, the rejection of claim 1 is incorporated and further, Beatty

discloses **generating a plurality of subsections of the graphical image** (Fig. 4, item

430 and the associated text, (e.g. col. 7 line 11 - col. 8 line 11), describe vertical

subsections of the graphical image), **and locating the graphical elements in the**

subsections as described by the datafile (col. 2 lines 42-43, "the architecture

including a graphical device layout (containing the graphical elements in subsections)").

As per claim 3, the rejection of claim 1 is incorporated and further, Beatty

discloses that **the subsections are displayed as tiers** (Fig. 4, item 430 and the

associated text, (e.g. col. 7 line 11 - col. 8 line 11), describe the subsections of the

system displayed as vertical tiers).

As per claim 4, the rejection of claim 1 is incorporated and further, Beatty

discloses **providing access to the visualization on a network** (col. 5 lines 12-20, "It

should be noted that (this invention may be used with)... computer system/network

combinations").

As per claim 5, the rejection of claim 4 is incorporated and further, Beatty

discloses that **the network is the Internet** (col. 5 lines 12-20, "It should be noted that

(this invention may be used with)... computer system/network combinations (i.e. the

Internet)").

As per claim 6, the rejection of claim 1 is incorporated and further, Beatty

discloses **communicating the rendered graphical representation across a network**

(col. 5 lines 12-20, "It should be noted that (this invention may communicate the

representation across)... computer system/network combinations").

As per claim 7, the rejection of claim 1 is incorporated and further, Beatty

discloses **receiving data for said rendering from a network connection** (col. 5 lines

12-20, "It should be noted that (this invention may receive data for rendering from)...

computer system/network combinations").

As per claim 8, the rejection of claim 7 is incorporated and further, Beatty

discloses **storing the data** (Fig. 1, item 180, and the associated text (e.g. col. 4 line 41

- col. 2 line 34), show a memory used to store data).

As per claim 9, the rejection of claim 1 is incorporated and further, Beatty

discloses:

- **providing at least one control on the graphical display and receiving a**

selection of the at least one control (col. 6 lines 26-30, "The processor, coupled to

the display (provides controls to) simulate operation of the ... software and emulated

operation of the (underlying architecture) ... to cause the (underlying architecture) to

change states"),

- **performing a graphical operation on the graphical display indicative of**

dynamic functional operations of the underlying architecture (col. 6 lines 30-31,

"The processor controls the display to update the (graphical display of the underlying

architecture in ways indicative of its dynamic functional operations)").

As per claim 11, the rejection of claim 1 is incorporated and further, Beatty

doesn't explicitly disclose that **the datafile includes extensible markup language**

(XML).

However, Weinberg, in an analogous environment, discloses that **the datafile**

includes extensible markup language (XML) (col. 2 lines 10-13, "the program

includes Web site scanning routines ... to gather information about ... HTML (and XML)

documents and links of a Web site").

Therefore, it would have been obvious to a person of ordinary skill in the art, at

the time the invention was made, to incorporate the teachings of Weinberg into the

system of Beatty to have the datafile include extensible markup language. The

modification would have been obvious because one of ordinary skill in the art would

have wanted the system to understand XML, to be able to collect as much information

as possible from the data file, to analyze the software to the fullest extent, in order to

enable the maximum optimization of the software and underlying architecture (Beatty,

col. 2 lines 27-30).

As per claim 12, the rejection of claim 1 is incorporated and further, Beatty

discloses **executing interactive operations to provide a graphical representation of**

collaborative interaction between the graphical elements (col. 6 lines 26-33, "The

processor, coupled to the display, simulates operation of the ... software... The

processor controls the display to update the (graphical representation to show

collaborative interaction between elements)").

As per claim 13, the rejection of claim 1 is incorporated and further, Beatty

discloses **altering the graphical elements based on a selected configuration of the**

software system (col. 6 lines 18-25, "the memory stores a plurality of ... (different

graphical elements/systems representative of underlying architecture components and

systems) corresponding to (a plurality of software system configurations)", and the

graphical elements displayed are altered when a user chooses a different

configuration).

As per claim 14, the rejection of claim 1 is incorporated and further, Beatty

discloses **receiving an event initiated by an operation performed in a second**

graphical display operating in isolation of actual components of the underlying

architecture (Fig. 4, items 460, 470, and 450 show additional graphical displays used

to initiate events, and col. 6 lines 26-33, "The processor, couples to the display,

simulates operation of the ... software and emulates operation of the particular

(underlying architecture) ... to cause the particular (underlying architecture) to change

states"), and **performing an operation on the graphical display based on the event**

(col. 6 lines 30-33, "The processor controls the display to update the (representation of

the underlying architecture)").

As per claim 15, the rejection of claim 1 is incorporated and further, Beatty

discloses **receiving an event initiated by an operation performed in a second**

graphical display operating in conjunction with actual components of the underlying architecture (Fig. 4, items 460, 470, and 450 show additional graphical displays used to initiate events, and col. 6 lines 34-43, "the system of the present invention my include an interface and a real (underlying architecture) ... associated with the computer. In this alternative, the processor causes the ... software to execute within the real (underlying architecture) ... to change states.)"), and **performing an operation on the graphical display based on the event** (col. 6 lines 39-43, "The processor controls the display to update the (graphical representation of the underlying architecture").

As per claims 17 and 18, Beatty/Weinberg also discloses such claimed limitations as addressed in claims 2 and 6 above, respectively.

As per claims 21, 22 and 24-26, Beatty/Weinberg also discloses such claimed limitations as addressed in claims 9, 14, 15 and 11 above, respectively.

As per claim 32-34, these are a product version of the claimed method discussed above in claims 1, 5 and 6, wherein all claimed limitations have also been addressed above and such a product is deemed to be inherent in the Beatty/Weinberg system and method for debugging software, otherwise it would be inoperative.

As per claim 41, Beatty discloses an **application service provider (ASP)**

system for visualizing an architecture of another distinct system (col. 3:14-19, "In

an alternative embodiment of the present invention, the system (i.e. ASP) further

comprises an architecture database, storable on a storage device of the general

purpose computer, that contains a plurality of user-selectable architectures

corresponding to a plurality of DSPs (i.e. another distinct system), the system thereby

allowing the user to select the particular DSP (to visualize) from the database"),

- **the ASP system comprising:**

- **a datafile including a description of the architecture** (col. 6 lines 20-23, "the

memory stores (a datafile containing) a plurality of user-selectable architectures

corresponding to a plurality of (underlying architectures)"),

- **a host computing system for transforming the datafile, a visualizer for**

receiving the transformed datafile and visualizing the architecture (col. 6 lines 23-

26, "(The datafile is transformed by the host system and then) the display coupled to the

memory (i.e. the visualizer), displays (i.e. visualizes the architecture)"),

- **the visualizer operating in one of a plurality of modes of operation** (Beatty

describes how the graphical representation is dependent on a particular mode of a

plurality of modes of operation at, col. 3:28-3:43, "In an alternative embodiment of the

present invention, the system further comprises source software display circuitry that

displays a source code representation of the DSP software in a further window on the

display … In an alternative embodiment of the present invention, the system further

comprises object software display circuitry that <u>displays an object code representation</u> of the DSP software in a further window on the display"),

    - a visual display for receiving and displaying the visualized architecture (col. 6 lines 24-26, "the (visual) display coupled to the memory (i.e. the visualizer), (receives and) displays (the visualized architecture)").

    - wherein the visualizer is utilized for visualizing the underlying architecture of the software system during conceptual development and deployment phases of the software system (col. 3:21-23, "Additionally, the present invention allows one or more of the user-selectable architectures correspond to DSPs that do not even exist (i.e. during conceptual development)", and col. 3:6-16, "the system of the present invention may include an interface between a processor of the general purpose computer and a real (non-emulated) DSP. In this alternative embodiment, the general purpose computer causes the DSP software to execute within the real DSP (i.e. deployment phase)"),

    - wherein the step of visualizing during the conceptual phase of the system is performed by the visualizer operating in a direct simulation mode before the underlying architecture has been implemented in the development and deployment phases (col. 3:6-16, "the system of the present invention may include an interface between a processor of the general purpose computer and a real (non-emulated) DSP. In this alternative embodiment, the general purpose computer causes the DSP software to execute within the real DSP (i.e. direct interaction simulation mode), in turn causing the real DSP to change states over time. The general purpose

computer monitors the states allowing the architectural display circuitry to update at least one field to reflect changes in the states", and col. 3:21-23, "Additionally, the present invention allows one or more of the user-selectable architectures correspond to DSPs that do not even exist (i.e. during the conceptual phase)"),

- **wherein the step of visualizing during the development phases of the system is performed by the visualizer operating in a prototype simulation mode** (col. 3:21-23, "Additionally, the present invention allows one or more of the user-selectable architectures correspond to DSPs that do not even exist (i.e. prototype simulation mode)"),

- **wherein the step of visualizing during the deployment phase of the system is performed by the visualizer operating in an architecture monitor mode** (col. 3:60-65, "In an alternative embodiment of the present invention, the architectural display circuitry (i.e. visualizer) allows the user to specify a level of detail regarding the graphical device layout to be displayed in the window (during the architecture monitor mode). The level of detail may be had by zooming in or out or may be had by displaying more or less DSP architecture detail, depending upon the user's wishes"),

Response to Arguments

6.   Applicants arguments have been considered but they are not persuasive.

In the remarks, the applicant has argued substantially that:

1)   The Beatty/Weinberg combination does not disclose the new limitations of amended claims 1, 32 and 41, at p. 6:10-22, 7:5-20, 8:1-40 and 9:6-10:4.

Examiner's response:

1)   The amended claims, and thus all arguments related to new and amended claim limitations, have been addressed in full in the above art rejection of amended claims 1, 32 and 41.

In the remarks, the applicant has argued substantially that:

2)   Beatty teaches a system with one mode, i.e. a debugging mode. In contrast, the instant invention discloses a system with three modes, i.e. a direct interaction simulation mode, a prototype simulation mode and an architecture monitor mode, at p. 7:15-20.

Examiner's response:

2)   The examiner disagrees with applicant's characterization of the applied art. The Beatty system discloses performing direct interaction simulation, prototype simulation and architecture monitoring at col. 3:6-6:26 as cited in the art rejection, above.

In the remarks, the applicant has argued substantially that:

3)   Neither Beatty nor Weinberg teaches a system for visualizing an architecture of another distinct system, at p. 10:5-6.

Examiner's response:

3)   The examiner disagrees with applicant's characterization of the applied art.

Beatty does disclose a system for visualizing an architecture of another distinct system,

at col. 3:6-6:26, as cited in the above art rejection.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andre R. Fowlkes whose telephone number is (571)

272-3697. The examiner can normally be reached on Monday - Friday, 8:00am-

4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tuan Q. Dam can be reached on (571)272-3695. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

ARF

TED T. VO
primary Examiner